

Claims

- [c1] 1. A transmission fluid sump for an automotive transmission having a housing, a gear system in the transmission housing that defines torque flow paths from a driving shaft to a driven shaft, the transmission fluid sump comprising:
- a reservoir portion for transmission fluid secured to a lower side of the transmission housing;
 - a threaded fill pipe extending vertically within the sump, the fill pipe having a central opening for accommodating filling of the reservoir portion with transmission fluid;
 - a shoulder on the fill pipe;
 - an upwardly extending sump extension within the reservoir portion;
 - an internally threaded opening in the sump extension;
 - a sump extension shoulder engaging the fill pipe shoulder when the fill pipe is threadably received in the internally threaded opening; and
 - a closure member received in the sump extension opening, the closure member having a seal surface engageable with the reservoir portion.
- [c2] 2. A transmission fluid sump for an automotive trans-

mission having a housing and a gear system in the transmission housing that defines torque flow paths from a driving shaft to a driven shaft, the transmission fluid sump comprising:

- a reservoir portion for transmission fluid secured to a lower side of the transmission housing;
- a threaded fill pipe extending vertically within the sump, the fill pipe having a central opening for accommodating filling of the reservoir portion with transmission fluid;
- a shoulder on the fill pipe;
- an upwardly extending sump extension within the reservoir portion;
- an internally threaded opening in the sump extension;
- a sump extension shoulder engaging the fill pipe shoulder when the fill pipe is threadably received in the internally threaded opening;
- a closure member received in the sump extension threaded opening; and
- means for establishing a fluid seal between the closure member and the sump extension.

[c3] 3. The transmission fluid sump set forth in claim 1 including a seal ring between the seal surface of the closure member and the reservoir portion, the closure member defining a single potential leak flow path for transmission fluid in the sump.

- [c4] 4. The transmission fluid sump set forth in claim 2 wherein the fill pipe and the closure member have independent threaded connections with the sump extension whereby tightening torque limits for the fill pipe may be specified independently of tightening torque limits for the closure member.
- [c5] 5. The transmission fluid sump set forth in claim 4 wherein the fill pipe is formed with a recess to accommodate a hand wrench for tightening the connection of the fill pipe with the sump.
- [c6] 6. The transmission fluid sump set forth in claim 4 wherein the closure member is formed with a recess to accommodate a hand wrench for tightening the connection of the closure member with the sump.
- [c7] 7. The transmission fluid sump set forth in claim 2 wherein the reservoir portion, the fill pipe, and the closure member are formed from a moldable thermoplastic material, thereby eliminating corrosion and minimizing weight.
- [c8] 8. The transmission fluid sump set forth in claim 2 wherein the reservoir portion, the fill pipe and the closure member are formed from a moldable thermoset material, thereby eliminating corrosion and minimizing

weight.

- [c9] 9. The transmission fluid pump set forth in claim 1 wherein the fill pipe, upon removal of the closure member, is received in the sump extension from the exterior of the sump without removal of the reservoir portion from the transmission housing, whereby the fill pipe can be removed for draining the sump and replaced with another fill pipe of different length to adjust transmission fluid level in the sump.